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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|----------------------|------------------|
| 09/775,349 | 02/01/2001 | Yechiam Yemini | 18704-015 | 7203 |
| 56949 | 7590 | 12/08/2005 | EXAMINER | |
| WILMER CUTLER PICKERING HALE AND DORR LLP COLUMBIA UNIVERSITY 399 PARK AVENUE NEW YORK, NY 10020 | | | VAUGHN JR, WILLIAM C | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2143 | |

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|---|--------------------------------------|--|
| Office Action Summary | Application No. 09/775,349 | Applicant(s) YEMINI ET AL. | |
| | Examiner William C. Vaughn, Jr. | Art Unit 2143 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>9/19/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.
2. The application has been examined. **Claims 1-20** are pending. The objection(s) and rejection(s) cited are as stated below:

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 1, recites the limitation of "a pair of said Nodes", is unclear as to applicant is stating that this includes the non-adjacent nodes, first or second nodes".
6. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
7. Claims 1, 3, 8 and 11 and 6 (e.g., exemplary claim 1), recites the limitation "said second node. There is insufficient antecedent basis for this limitation in the claim. The Examiner will interpret this limitation to mean, "said second adjacent Node".

Art Unit: 2143

8. Claims 5 and 6 (e.g., exemplary claim 5) recite the limitation "said replicated node".

There is insufficient antecedent basis for this limitation in the claim. The Examiner will interpret this limitation to mean, "said mirror Node".

9. Exemplary claim 16, recites the limitation "said second nodes". There is insufficient antecedent basis for this limitation in the claim. The Examiner will interpret this limitation to mean, "said second adjacent Node". It is also unclear, as to which of "said plurality of second nodes" is applicant claiming?

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claims 1, 11, 16, 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bosack, U.S. Patent 5,088,032 in view of Beshai et al. (Beshai), U.S. Patent No. 6,667,956.

12. Regarding **claim 1**, Bosack discloses the invention substantially as claimed. Bosack discloses *a network comprising a plurality of Nodes interconnected by Links (a) each Node is assigned a set of one or more coordinate labels, each representing a path comprising one or more Links or other Nodes* (Bosack teaches a description of each datalink coupled to a port of the gateway is provided, that includes the topological delay along a link), [see Bosack, Col. 3, lines 65-67 and Col. 4, lines 1-9]; *(b) each coordinate label is unique to the Node to which it is assigned* (Bosack teaches the each description is mapped (unique) to each gateway), [see

Art Unit: 2143

Bosack, Col. 4, lines 1-9]; *(c) a path between a first Node and a second Node* (Bosack teaches paths between a gateway and destination gateways that are compiled based on the description of each data link between the gateway and the destination gateways), [see Bosack, Col. 5, lines 15-67 and Col. 9, lines 1-43] *and (d) a pair of said Nodes that are connected by said Links stores the set of one or more coordinate labels corresponding to the other Node of said pair of Nodes* [see Bosack, Col. 4, lines 64-67 and Col. 5, lines 1-23]. However, Bosack does not explicitly disclose non-adjacent Node being determined from one of said coordinate labels assigned to said first Node and one of said coordinate labels assigned to said second Node.

13. In the same field of endeavor, Beshai discloses (e.g., multi class digital network)).

Beshai discloses a non-adjacent node being determined from one of said coordinate labels assigned to said first node and one of said coordinated labels assigned to said second node [see Beshai, Col. 6, lines 30-40].

14. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Beshai's teachings of a multi class digital network with the teachings of Bosack, for the purpose of controlling the network which can accommodate the increasing demand for digital services without unreasonable investment in network infrastructure [see Beshai, Col. 1, lines 49-67].

15. Regarding **claim 16**, Bosack-Beshai discloses *a method for determining a path from a source Node to a destination Node in a network comprising a plurality of Nodes interconnected by Links, said Nodes including a first Node, and a plurality of second Nodes, said second Nodes including said source Node and destination Node, said method comprising the steps of: (a) assigning to each of said second Nodes including said source Node and said destination Node,*

Art Unit: 2143

*one or more coordinate labels, each coordinate label assigned to a second Node representing a path through said network from said second Node to said first Node [see rejection of claim 1, supra]; (b) determining a path from said source Node to said destination Node by combining one coordinate label of said source Node and one coordinate label of said destination Node [see rejection of claim 1, supra]; and (c) at one of said second Nodes, storing one or more coordinate labels of a second Node adjacent to said one second Node [see rejection of claim 1, supra]. The same motivation that was utilized in the combination of claim 1, applies equally as well to claim 16. By this rationale **claim 16** is rejected.*

16. Regarding **claim 18**, Bosack-Beshai discloses *a Node for use in a network, said network comprising a plurality of Nodes connected by Links [see rejection of claim 1, supra], wherein: (a) said Node for use in said network has one or more coordinate labels assigned thereto, each coordinate label representing a path from said Node to a particular other Node of said network, each of said coordinate labels being unique to said Node [see rejection of claim 1, supra]; and (b) said Node stores one or more coordinate labels corresponding to an adjacent Node [see rejection of claim 1, supra]. The same motivation that was utilized in the combination of claim 1, applies equally as well to claim 18. By this rationale **claim 18** is rejected.*

Claim Rejections - 35 USC § 103

17. **Claims 2, 17, 19 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bosack-Beshai as applied to claims 1, 16 and 18 above, and further in view of McCanne, U.S. Patent No. 6,785,704.

18. Regarding **claim 2**, Bosack-Beshai discloses the invention substantially as claimed. However, Bosack-Beshai does not disclose wherein each node of said pair of Nodes

Art Unit: 2143

reroutes any data intended for the other Node in the event said other Node of said pair of Nodes moves or fails.

19. In the same field of endeavor, McCanne discloses (e.g., content distribution system). McCanne discloses wherein each node of said pair of Nodes reroutes any data intended for the other Node in the event said other Node of said pair of Nodes moves or fails [see McCanne, Col. 11, lines 65-67 and Col. 12, lines 1-20].

20. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated McCanne's teachings of content distribution system with the teachings of Bosack-Beshai, for the purpose of providing a more efficient way of rerouting data when a failure occurs within a network. By this rationale claim 2 is rejected.

21. Regarding **claim 17**, Bosack-Beshai and McCanne discloses wherein at said one second Node, rerouting data intended for said second Node adjacent to said one second Node in the event said second Node adjacent to said one second Node Nodes moves or fails [see rejection of claim 2, supra]. The same motivation that was utilized in the combination of claim 17, applies equally as well to claim 17. By this rationale **claim 17** is rejected.

22. Regarding **claim 19**, Bosack-Beshai and McCanne discloses wherein said Node reroutes any data intended for said adjacent Node in the event said adjacent Node is moved to a different location [see rejection of claim 2, above]. The same motivation that was utilized in the combination of claim 2, applies equally as well to claim 19. By this rationale **claim 19** is rejected.

Art Unit: 2143

23. Regarding **claim 20**, Bosack-Beshai and McCanne discloses *wherein said Node reroutes any data intended for said adjacent Node in the event said adjacent Node is unable to receive said packet* [see rejection of claim 19, supra]. By this rationale **claim 20** is rejected.

Claim Rejections - 35 USC § 103

24. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

25. **Claims 8-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bosack, U.S. Patent 5,088,032 in view of Beshai et al. (Beshai), U.S. Patent No. 6,667,956 and in further view of Heddaya et al. (Heddaya), U.S. Patent No. 6,622,157.

26. Regarding **claim 8**, Bosack discloses the invention substantially as claimed. Bosack discloses *a network comprising a plurality of Nodes interconnected by Links (a) each Node is assigned a set of one or more coordinate labels, each representing a path comprising one or more Links or other Nodes* (Bosack teaches a description of each datalink coupled to a port of the gateway is provided, that includes the topological delay along a link), [see Bosack, Col. 3, lines 65-67 and Col. 4, lines 1-9]; *(b) each coordinate label is unique to the Node to which it is assigned* (Bosack teaches the each description is mapped (unique) to each gateway), [see Bosack, Col. 4, lines 1-9]; *(c) a path between a first Node and a second Node* (Bosack teaches paths between a gateway and destination gateways that are compiled based on the description of each data link between the gateway and the destination gateways), [see Bosack, Col. 5, lines 15-

Art Unit: 2143

67 and Col. 9, lines 1-43]. However, Bosack does not explicitly disclose a non adjacent node being determined from one of said coordinate labels assigned to said first node and one of said coordinate labels assigned to said second node as well as at least one of said plurality of nodes automatically creates at least one cache and redirects a data request to said at least one cache.

27. In the same field of endeavor, Beshai discloses (e.g., multi class digital network)).

Beshai discloses a non-adjacent node being determined from one of said coordinate labels assigned to said first node and one of said coordinated labels assigned to said second node [see Beshai, Col. 6, lines 30-40].

28. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Beshai's teachings of a multi class digital network with the teachings of Bosack, for the purpose of controlling the network which can accommodate the increasing demand for digital services without unreasonable investment in network infrastructure [see Beshai, Col. 1, lines 49-67]. However, Bosack-Beshai does not explicitly disclose at least one of said plurality of nodes automatically creates at least one cache and redirects a data request to said at least one node.

29. In the same field of endeavor, Heddaya discloses (e.g., extending network services using mobile agents). Heddaya discloses *at least one of said plurality of Nodes automatically creates at least one cache and redirects a data request to said at least one cache* [see Col. 8, lines 33-54].

30. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Heddaya's teachings of extending network

Art Unit: 2143

services using mobile agents with the teachings of Bosack-Beshai, for the purpose of providing a more efficient way of redirecting request through the utilization of mobile agents.

31. Regarding **claim 9**, Bosack-Beshai and Heddaya discloses *where said at least one cache is mobile* (The Examiner takes Official Notice (see MPEP 2144.03) that it is extremely well known in the networking art cache items are mobile), [see prior art of record, “Bui et al., “Randomized Adaptive Routing Based on Mobile Agents”). By this rationale **claim 9** is rejected.

32. Regarding **claim 10**, Bosack-Beshai and Heddaya discloses *where said at least one cache contains a load from a mobile Node* [see rejection of claim 9, supra]. By this rationale **claim 10** is rejected.

Claim Rejections - 35 USC § 103

33. **Claims 3-7 and 11-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bosack-Beshai in view of Denman et al. (Denman), U.S. Patent No. 6,490,451.

34. Regarding **claim 3**, Bosack-Beshai discloses the invention substantially as claimed. Bosack-Beshai discloses *a network comprising a plurality of Nodes interconnected by Links* [see rejection of claim 1, supra], *wherein: (a) each Node is assigned a set of one or more coordinate labels, each representing a path comprising one or more Links or other Nodes* [see rejection of claim 1, supra]; *(b) each coordinate label is unique to the Node to which it is assigned* [see rejection of claim 1, supra]; *(c) a path between a first Node and a second Node being determined from one of said coordinate labels associated with said first Node and one of said coordinate labels associated with said second Node* [see rejection of claim 1, supra]. However, Bosack-

Art Unit: 2143

Beshai does not explicitly disclose (d) at least one of said plurality of Nodes is automatically replicated to create at least one mirror Node.

35. In the same field of endeavor, Denman discloses (e.g., system and method for providing packet-switched telephony). Denman discloses *at least one of said plurality of Nodes is automatically replicated to create at least one mirror Node* [see Denman, Col. 8, lines 5-7].

36. Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Denman's teachings with the teachings of Bosack-Beshai, for the purpose of including multiple replications of any node in order to improve efficiency and overall performance [see Denman, Col. 8, lines 5-7]. By this rationale claim 3 is rejected.

37. Regarding **claim 4**, Bosack-Beshai and Denman discloses *where said at least one mirror Node is mobile* [see Denman, Col. 8, lines 5-7 and Figure 2]. The same motivation that was utilized in the combination of claim 3, applies equally as well to claim 4. By this rationale **claim 4** is rejected.

38. Regarding **claim 5**, Bosack-Beshai and Denman discloses *where said replicated Node is mobile* [see Denman, Col. 8, lines 5-7]. The same motivation that was utilized in the combination of claim 3, applies equally as well to claim 5. By this rationale **claim 5** is rejected.

39. Regarding **claim 6**, Bosack-Beshai and Denman discloses *where said replicated Node is a part of the World Wide Web* [see Denman, Col. 5, lines 23-45]. The same motivation that was utilized in the combination of claim 3, applies equally as well to claim 6. By this rationale **claim 6** is rejected.

Art Unit: 2143

40. Regarding **claim 7**, Bosack-Beshai and Denman discloses *wherein a packet is routed to a closest Node of said plurality of mirror Nodes* [see rejection of claim 3, supra]. By this rationale **claim 7** is rejected.

41. Regarding **claim 11**, the limitations of this claim is substantially the same as that of claim 1, and thus is rejected for the same rationale in rejecting claim 1, above. Furthermore, with regards to the limitation of *at least one of said plurality of Nodes is a mobile Node* [see Denman, Figure 2]. The same motivation that was utilized in the combination of claims 1 and 3, applies equally as well to claim 11. By this rationale **claim 11** is rejected.

42. Regarding **claim 12**, Bosack-Beshai and Denman discloses where said mobile Node is a PDA [see Denman, Col. 3, lines 40-67]. The same motivation that was utilized in the combination of claims 1, 3 and 11 applies equally as well to claim 12. By this rationale claim 12 is rejected.

43. Regarding **claim 13**, Bosack-Beshai and Denman discloses where said mobile Node is a cellular telephone [see Denman, Col. 5, lines 3-22]. The same motivation that was utilized in the combination of claims 1, 3 and 11 applies equally as well to claim 13. By this rationale claim 13 is rejected.

44. Regarding **claim 14**, Bosack-Beshai and Denman discloses *where said mobile Node is a laptop computer* [see rejection of claim 3, supra]. The same motivation that was utilized in the combination of claims 1, 3 and 11 applies equally as well to claim 14. By this rationale **claim 14** is rejected.

45. Regarding **claim 15**, Bosack-Beshai and Denman discloses *where said mobile Node is a router located on a vehicle* (The Examiner takes Official Notice (see MPEP 2144.03) that it is

Art Unit: 2143

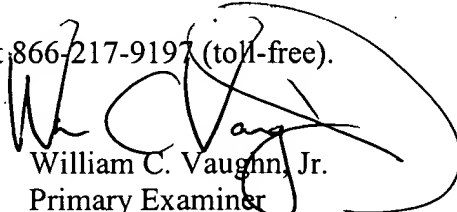
extremely well known in the networking art at the time the invention was made for a mobile node to include router that is located within a vehicle, see also prior art of record, Chennakeshu et al., U.S. Patent No. 6,542,758, Figure 11, Col. 7, lines 39-47). The same motivation that was utilized in the combination of claims 1, 3 and 11 applies equally as well to claim 15. By this rationale **claim 15** is rejected.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Vaughn, Jr. whose telephone number is (571) 272-3922. The examiner can normally be reached on 8:00-6:00, 1st and 2nd Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


William C. Vaughn, Jr.
Primary Examiner
Art Unit 2143

WCV